

AMENDMENTS TO THE CLAIMS

Please amend the claims of the present application as set forth below. In accordance with the PTO's revised amendment format, a detailed listing of all claims has been provided. This listing of claims will replace all prior versions and listings of claims in the application. Changes to the claims are shown by strikethrough (for deleted matter) and underlining (for added matter).

By way of overview, claims 1-3, 11-13, and 15-30 are currently pending (because claims 4 and 14 have been canceled without prejudice or disclaimer in this Response).

The status of the pending claims is indicated below:

- a) Claims 1, 11, and 25-27 are currently amended;
- b) Claims 2, 3, 5-10, 12, 13, and 15-24 are original; and
- c) Claims 28-30 are new.

Listing of Claims

1. (Currently amended) A method for processing video data, comprising:
receiving a principal video stream from a source;
receiving a video sub-stream containing supplemental information associated with the principal video stream;
in a single stage operation, performing an operation on the principal video stream and combining the principal video stream with the video sub-stream to produce processed data, wherein the single stage operation requires only a single read transaction to perform the single stage operation; and
outputting the processed data.

1 2. (Original) The method according to claim 1, wherein the performing of the
2 operation comprises de-interlacing the principal video stream.

3 4. (Original) The method according to claim 1, wherein the performing of the
4 operation comprises resizing the principal video stream.

5 6. (Cancelled).

7 8. (Original) The method according to claim 1, wherein the performing and the
9 combining are performed in a YUV color space.

10 11. (Original) The method according to claim 1, further including a step of
12 forwarding instructions to a graphics processing module, the instructions informing the
13 graphics processing module how to execute the performing and the combining.

14 15. (Original) The method according to claim 6, wherein the instructions identify a
16 location at which to receive the principal video stream, a location at which to receive the
17 video sub-stream, and a location at which to provide the processed data.

18 19. (Original) The method according to claim 7, wherein the instructions identify a
20 rectangle of data from which to receive the principal video stream within a video stream
21 surface, a rectangle of data from which to receive the video sub-stream within a video
22 sub-stream surface, and a rectangle at which to output the processed data within a
23 destination surface.

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1 9. (Original) The method according to claim 1, wherein the video sub-stream
2 includes at least one of: close captioned information; DVD sub-picture information; and
3 PAL teletext information.

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5 10. (Original) The method according to claim 1, wherein the performing and the
6 combining are performed on an apparatus that uses a Uniform Memory Architecture
7 (UMA) design.

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9 11. (Currently amended) An apparatus for processing video data, comprising:
10 a renderer module;
11 a data processing module; and
12 an interface module that couples the renderer module to the data processing
13 module,

14 wherein the renderer module includes logic configured to generate and provide
15 instructions to the data processing module to execute at least the following functions in a
16 single stage:

17 a) performing an operation on a received principal video stream; and
18 b) combining the received principal video stream with a video sub-stream,
19 wherein the single stage operation requires only a single read transaction to
20 perform the single stage operation.

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22 12. (Original) An apparatus according to claim 11, wherein the performing of the
23 operation comprises de-interlacing the principal video stream.

1 13. (Original) An apparatus according to claim 11, wherein the performing of the
2 operation comprises resizing the principal video stream.

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4 14. (Canceled).

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6 15. (Original) The apparatus according to claim 11, wherein the performing and
7 the combining are performed in a YUV color space.

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9 16. (Original) The apparatus according to claim 11, wherein the instructions
10 provided by the renderer module inform the data processing module how to execute the
11 performing and the combining.

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13 17. (Original) The apparatus according to claim 16, wherein the instructions
14 identify a location at which to receive the principal video stream, a location at which to
15 receive the video sub-stream, and a location at which to provide the processed data.

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17 18. (Original) The apparatus according to claim 17, wherein the instructions
18 identify a rectangle of data from which to receive the principal video stream within a
19 video stream surface, a rectangle of data from which to receive the video sub-stream
20 within a video sub-stream surface, and a rectangle at which to output the processed data
21 within a destination surface.

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23 19. (Original) The apparatus according to claim 11, wherein the video sub-stream
24 includes at least one of: close captioned information; DVD sub-picture information; and
25 PAL teletext information.

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2 20. (Original) The apparatus according to claim 11, wherein the apparatus is
3 configured to operate using a Uniform Memory Architecture (UMA) design.

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5 21. (Original) The apparatus according to claim 11, wherein the data processing
6 module comprises a graphics processing module.

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8 22. (Original) The apparatus according to claim 21, wherein the graphics
9 processing module is configured to execute video processing tasks using a graphics
10 pipeline.

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12 23. (Original) The apparatus according to claim 11, wherein the data processing
13 module includes multiple texturing units, wherein a first texturing unit is allocated to a
14 component of the received video stream, and a second texturing unit is allocated to the
15 received video sub-stream.

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17 24. (Original) The apparatus according to claim 23, wherein the data processing
18 module is configured to execute the performing and the combining in a single stage by
19 processing video data obtained from the first and second texturing units substantially in
20 parallel.

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22 25. (Currently amended) An apparatus for processing video data, comprising:
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24 a memory;
25 a computer processing module for controlling the apparatus, the computer
processing module being coupled to the memory;

1 a renderer module;
2 a graphics processing module coupled to same memory as the computer
3 processing module; and
4 an interface module that couples the renderer module to the graphics processing
5 module,

6 wherein the renderer module includes logic configured to generate and provide
7 instructions to the data graphics processing module to execute at least the following
8 functions in a single stage:

9 a) performing an operation on a received principal video stream; and
10 b) combining the received principal video stream with a video sub-stream,
11 wherein the graphics processing module includes logic configured to receive the
12 instructions provided by the renderer module, and in response thereto, execute the
13 performing and the combining,
14 and wherein the single stage operation requires only a single read transaction to
15 perform the single stage operation.

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17 26. (Currently amended) An apparatus for processing video data, comprising:
18 means for receiving a principal video stream from a source;
19 means for receiving a video sub-stream containing supplemental information
20 associated with the principal video stream;
21 means, in a single stage operation, for performing an operation on the principal
22 video stream and combining the principal video stream with the video sub-stream to
23 produce processed data, wherein the single stage operation requires only a single read
24 transaction to perform the single stage operation; and
25 outputting the processed data.

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2 27. (Currently amended) A computer readable media having machine readable
3 instructions stored thereon, the instructions comprising:

4 logic configured to receive a principal video stream from a source;
5 logic configured to receive a video sub-stream containing supplemental
6 information associated with the principal video stream;

7 logic configured to, in a single stage operation, perform an operation on the
8 principal video stream and combine the principal video stream with the video sub-stream
9 to produce processed data, wherein the single stage operation requires only a single read
10 transaction to perform the single stage operation; and

11 logic configured to output the processed data.

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13 28. (New) A method for processing video data, comprising:

14 receiving a principal video stream from a source;
15 receiving a video sub-stream containing supplemental information associated with
16 the principal video stream;

17 in a single stage operation, performing an operation on the principal video stream
18 and combining the principal video stream with the video sub-stream to produce processed
19 data, wherein the single stage operation involves reading first input data associated with
20 the received principal video stream in parallel with second input data associated with the
21 received video sub-stream data; and

22 outputting the processed data.

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2 29. (New) The method of claim 1, wherein the single stage operation includes
3 only one read transaction.
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5 30. (New) The method of claim 29, wherein the single stage operation includes
6 only one write transaction.
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